

Serial No.: 10/727,005

Filing Date: 12/3/2003

Title: DYNAMIC DISTORTION CONTROL

Attorney Docket No. 100.127US02

REMARKS

The Office Action mailed on March 27, 2006 has been reviewed, as well as the art cited. Claims 1-2 and 4-22 are pending in this application.

Summary of Examiner Interview

The Applicants' representatives, David Fogg (Registration Number 35,138) and Joseph Kendrick (Registration Number 53,109) thank Examiner Singh for the opportunity to discuss aspects of this case in a personal interview on May 8, 2006.

Claims 1 and 16 were specifically discussed with respect to the Examiner's rejection of these claims under 35 U.S.C. §103(a) as being unpatentable over Pidgeon in view of Nazarathy. During the interview, the Applicants' representatives asserted that neither Pidgeon nor Nazarathy discussed a microprocessor such as that described by the Applicant. The Examiner and the Applicants' representatives discussed a potential amendment to claims 1 and 16 to clarify that the microprocessor generates control signals for both the modulator and the pre-distorter.

The Applicants' representatives believe that the substance and scope of the personal interview of May 8, 2006 is accurately captured in the summary above and the arguments below.

Rejections under 35 U.S.C. § 103

Claims 1, 2, 4, 5, 7-9, 10-12, 14, 16-18, and 20-22 were rejected under 35 USC § 103(a) as being unpatentable over Pidgeon (U.S. Patent No. 5,850,305) in view of Nazarathy et al. (U.S. Patent No. 5,424,680), hereinafter referred to as Nazarathy. The Applicant respectfully traverses this rejection.

Claims 1, 2, 4-5, 7-9

Claim 1 reads as follows (emphasis added):

1. A transmitter, comprising:
 - an input, coupleable to receive an RF signal;
 - a pre-distorter, coupled to the input, that selectively adds distortion to the RF signal;
 - a laser that provides a light source for optical transmission;
 - a modulator, coupled to the laser and the pre-distorter, that modulates the light from the laser with the RF signal from the pre-distorter to produce an output for the transmitter;
 - wherein the distortion added by the pre-distorter is controlled to reduce distortions in the output of the transmitter generated by the modulator;
 - a distortion monitor, coupled to the output of the transmitter, that monitors at least one frequency of the output of the transmitter to detect distortion in the modulator output without the use of a pilot tone; and
 - a microprocessor, coupled to the distortion monitor, the pre-distorter, and the modulator that uses an output of the distortion monitor to selectively generate control signals for the modulator and the pre-distorter to reduce the distortion in the output of the transmitter.

With respect to claim 1, the Applicant respectfully asserts that the references do not disclose “a microprocessor ... that uses an output of the distortion monitor to selectively generates control signals for both the modulator and the pre-distorter” as cited in claim 1. See, for example, the illustrative embodiment in Figs. 1 and 3 of the present application. Accordingly, it is respectfully requested that the rejection of claim 1 be withdrawn.

Claims 2, 4-5, and 7-9 depend from claim 1. Accordingly, it is respectfully requested that the rejection of these claims be withdrawn for at least the same reasons as claim 1.

Claims 10-12, 14

Claim 10 reads as follows (emphasis added):

10. A method for controlling a non-linear device, the method comprising:
receiving an output signal of the non-linear device;
monitoring the output signal for distortion at a first selected frequency;
generating signals indicative of a level of distortion at the monitored first frequency; and

when the signal indicates excessive distortion is present in the output signal,
processing the signal indicative of a level of distortion in a microprocessor to selectively generate control signals for the non-linear device and a pre-distorter to reduce the distortion.

With respect to claim 10, the Applicant respectfully asserts that the references do not disclose “processing the signal indicative of a level of distortion in a microprocessor to selectively generate control signals for the non-linear device and a pre-distorter” as cited in claim 10. Accordingly, it is respectfully requested that the rejection of claim 10 be withdrawn.

Claims 11, 12, and 14 depend from claim 10. Accordingly, it is respectfully requested that the rejection of these claims be withdrawn for at least the same reasons as claim 10.

Claims 16-18, 20-22

Claim 16 reads as follows (emphasis added):

16. A transmission system, comprising:

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at least one optical transmitter with an input coupleable to receive input data and providing at least one optical output;

at least one optical link coupled to each of the at least one optical output; an optical receiver coupled to each of the at least one optical link;

the optical transmitter including an optical modulator and a pre-distorter circuit, wherein the pre-distorter generates distortions to reduce distortions in the output of the optical transmitter; and

a control circuit for dynamic distortion control in the optical transmitter, the control circuit comprising:

an input coupleable to receive a signal from the optical modulator of the transmitter;

a first frequency monitor, coupled to the input, that monitors the level of distortion at a first frequency and that creates a first signal indicative of the level of the distortion without the use of a pilot tone; and

a controller, coupled to the first frequency monitor to receive the first signal and to selectively create control signals for the modulator and the pre-distorter.

With respect to claim 16, the Applicant respectfully asserts that the references do not disclose “a controller … to selectively create control signals for the modulator and the pre-distorter” as cited in claim 16. Accordingly, it is respectfully requested that the rejection of claim 16 be withdrawn.

Claims 17, 18, and 20-22 depend from claim 16. Accordingly, it is respectfully requested that the rejection of these claims be withdrawn for at least the same reasons as claim 16.

Claims 6 and 19 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Pidgeon in view of Nazarathy in view of Scheinberg (U.S. Patent No. 5,625,307). Applicant respectfully traverses this rejection.

Claim 6

Claim 6 is directed to the transmitter of claim 1. Claim 6 further discusses wherein the first and second frequency monitors include double balanced mixers.

The Applicants respectfully assert that the three references, alone or in combination, do not teach or suggest the transmitter of claim 6. In particular, and as discussed in claim 1 above, the Applicant respectfully asserts that Pidgeon in view of Nazarathy does not disclose “a microprocessor ... that uses an output of the distortion monitor to selectively generates control signals for both the modulator and the pre-distorter” as called for in claim 1 and included in claim 6. The addition of Scheinberg does not cure this defect. Accordingly, it is respectfully requested that the rejection of claim 6 under 35 U.S.C. § 103(a) be withdrawn.

Claim 19

Claim 19 depends directly from claim 18 and is directed to the system of claim 16. Claim 19 calls for the first and second frequency monitors of claims 16 and 18 to include double balanced mixers.

The Applicants respectfully assert that the three references, alone or in combination, do not teach or suggest the system of claim 19. In particular, and as discussed in claim 16 above, the Applicant respectfully asserts that Pidgeon in view of Nazarathy does not disclose “a microprocessor ... that uses an output of the distortion monitor to selectively generates control signals for both the modulator and the pre-distorter” as called for in claim 16 and included in claim 19. The addition of Scheinberg does not cure this defect. Accordingly, it is respectfully requested that the rejection of claim 19 under 35 U.S.C. § 103(a) be withdrawn.

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Allowable Subject Matter

Applicant thanks the Examiner for indicating that claim 15 is allowed.

Claim 13 was objected to as being dependent upon a rejected base claim, but was indicated to be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims. In light of the arguments presented with respect to claim 10, claim 13 has not been amended to place it in independent form at this time.

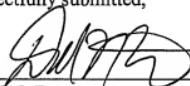
CONCLUSION

Applicant respectfully submits that claims **1-2 and 4-22** are in condition for allowance and notification to that effect is earnestly requested. If necessary, please charge any additional fees or credit overpayments to Deposit Account No. 502432.

If the Examiner has any questions or concerns regarding this application, please contact the undersigned at the number listed below.

Respectfully submitted,

Date: June 19, 2006



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